CURRENTLY PENDING CLAIMS

(If amendment in response to OA 1/17/03 is entered)
US Pat App Ser No. 09/912,627
Filed 8/1/00

1. (Cancelled) A process for preparing a supported chitosan biosorbent useful for the treatment of wastewater which comprises preparing a ceramic support material, preparing a chitosan gel, and coating said chitosan gel to said ceramic support material.

2. (Cancelled) The process of claim 1 wherein a second surface coating of chitosan gel is applied to said supported chitosan biosorbent.

3. (Cancelled) The process of claim 1 wherein said ceramic support material comprises acid treated alumina prepared by drying ceramic alumina, mixing the dry ceramic alumina with an acid to form a mixture, filtering and washing the mixture to prepare a washed mixture, and drying the washed mixture.

4. (Cancelled) The process of claim 1 wherein said chitosan gel is prepared by dissolving chitosan in an acid.

5. (Cancelled) The process of claim 4 wherein said acid is an organic acid.

6. (Cancelled) The process of claim 5 wherein said organic acid is selected from the group consists of acetic and oxalic acid.

7. (Cancelled) The process of claim 1 wherein said chitosan-coated biosorbent is filtered under a vacuum, washed, dried and coated with a second layer of chitosan gel.

8. (Once amended) A biosorbent composition comprising a support material coated with chitosan useful for the treatment of wastewater wherein said chitosan has an affinity for adsorption of metals from wastewater.

9. (Original) The composition of claim 8 wherein said biosorbent composition is useful for removing heavy metals from wastewater.

10. (Original) The composition of claim 8 wherein said support material comprises a ceramic support material.

11. (Original) The composition of claim 8 wherein said biosorbent composition is prepared by dip coating chitosan gel on to said support material.

12. (Original) The composition of claim 11 wherein said support material comprises a ceramic support material.

13. (Original) The composition of claim 10 wherein said biosorbent composition is prepared by spin coating chitosan gel on to said support material.

14. (Once amended) A composition of claim 13 wherein said support material comprises [a ceramic support material] ceramic alumina or silica, and wherein oxalic acid is used to bind the chitosan to the support material.

15. (Once amended) A process for treating aqueous systems containing heavy metals comprising adding a chitosan-coated biosorbent to an aqueous system wherein said chitosan has an affinity for adsorption of said heavy metals from the aqueous system.

16. (Original) The process of claim 15 wherein said chitosan-coated biosorbent comprises a support material coated with chitosan gel.

17. (Original) The process of claim 15 wherein said support material comprises a ceramic support material.

18. (Original) The process of claim 15 wherein the aqueous systems are aqueous waste streams.

19. (Once amended) A biosorbent composition comprising a support material coated with chitosan, its equivalents and the like useful for the treatment [for] of wastewater wherein said chitosan has an affinity for adsorption of metals from wastewater.

20. (Cancelled) A process for preparing a biosorbent useful for the treatment of wastewater which comprises preparing a ceramic support material, preparing a gel, and coating said gel to said ceramic support material, wherein said gel comprises chitosan, its equivalents and the like.

21. (Once amended) A process for treating aqueous systems containing heavy metals comprising adding a biosorbent to an aqueous system, wherein said biosorbent comprises a coating of chitosan, its equivalents and the like wherein said chitosan has an affinity for adsorption of heavy metals from the aqueous system.

22. (Cancelled) The process of claim 1 wherein said support material comprises perlite.

23. (Previously Added) The composition of claim 10 wherein said ceramic support material comprises perlite.

24. (Previously Added) The process of claim 17 wherein said support material comprises perlite.

25. (New) A biosorbent composition comprising a support material coated with chitosan useful for the treatment of wastewater wherein said chitosan is adhered to the support material by electrostatic forces, van der Waals forces and/or hydrogen bonding.

26. (New) A process for treating aqueous systems containing heavy metals comprising adding a chitosan-coated biosorbent to an aqueous system wherein said chitosan is adhered to the support material by electrostatic forces, van der Waals forces and/or hydrogen bonding.

27. (New) A biosorbent composition consisting essentially of a support material coated with chitosan useful for the treatment of wastewater.

28. (New) A process for treating aqueous systems containing heavy metals comprising adding a biosorbent to an aqueous system wherein said biosorbent consists essentially of a support material coated with chitosan.

29. (New) The biosorbent composition of claim 14, wherein the ceramic support is ultrafine ceramic alumina.

30. (New) The biosorbent composition of claim 8, wherein said biosorbent composition is prepared by coextrusion encapsulation or fluidized bed coating the chitosan gel onto said support material.

31. (New) The biosorbent composition of claim 11, wherein the support material is coated twice with chitosan.

32. (New) The biosorbent composition of claim 8, wherein the chitosan has an affinity for adsorption of cesium, thorium, lead, mercury, arsenic, chromium, copper, or nickel from wastewater.